

REMARKS

In the Office Action, Claims 1-13 were rejected under 35 U.S.C. 103 as being unpatentable over Fragstein (US 6,074,738) for reasons set forth in the Action. In the previous response, the claims had been amended. However, as noted in the present Office Action, the amendment did not overcome the grounds of rejection. Accordingly, the amendment of the previous response is cancelled in this response. In order to overcome the rejection, claim 1 is amended to state that the coating of breathable material augments a liquid penetration resistance of the membrane for a liquid having a surface tension lower than the surface tension (73 dynes/centimeter) of liquid water. A corresponding amendment is made in claim 13. Thus, claim 1 and its dependent claims 2-12, as well as independent claim 13, include a limitation not previously presented in the claims. This limitation finds support in the specification on page 6, which recites:

“In the case of liquid penetration testing, substrates that pass liquid penetration will fail with simple changes in surface tension. Plain Water, for example, with a Surface Tension of 73-dynes / cm will instantly become less than 40 dynes/cm with the simple addition of a few drops of surfactant, such as soap. Surgical Gown fabrics that contain microporous membranes will pass penetration tests with water at 73-dynes / cm surface tension but fail when exposed to blood that is about 43- dynes/cm. Isopropyl Alcohol has a surface tension of about 23–dynes / cm. Reducing pore sizes, in a microporous membrane, to overcome penetration resistance problems caused by low surface tension liquids simply reduces MVTR (Moisture Vapor Transmission Rates.)

A type of breathable membrane that prevents liquid penetration but allows for outward moisture elimination is the monolithic or solid membrane. This type of membrane is usually produced by extrusion or casting of soft and hard block polymers to produce a film which is liquid penetration resistant but allows moisture to pass through from a higher level of humidity to a lower level of humidity.”

In view of the foregoing cited passage from the present specification, it is clear that the teachings of the specification contemplate the situation of liquids (that may contain biohazards) having a surface tension significantly less than that of pure water (72.8 dynes/centimeter). For example, the ASTM tests for penetration resistance mentioned in claim 9 can be performed with a variety of substances, some of which have values of surface tension well below that of pure water. Such penetration resistance is not related to the oleophobic coating materials discussed in Fragstein. Oleophobic (from the Greek fear of oil) refers to the physical property of a molecule that is repelled from oil.

Upon review of the cited Fragstein patent, it appears that the teachings of Fragstein do not cover the subject matter of such low surface tension. Fragstein is limited to water.

In column 2 (beginning at line 21) Fragstein states the purpose of providing flexible liquid water resistant having improved resistance especially to oil contaminants. The end product is to have an enhanced moisture vapor transmission rate. The product is provided with two layers, namely, a microporous polymer layer that is permeable to water vapor, and air-impermeable polymer layer that is water vapor permeable. The first layer is made oleophobic by treating it with an oleophobic polymer.

In column 6 (beginning at line 48) Fragstein teaches that, upon inclusion of an additional middle layer, the product can be used to remove molecules of low molecular weight from solutions, distillations, sewage, and juices by a selective diffusion behavior of the middle layer which must have higher solubility for passing molecules than for the other molecules of the mixture to be concentrated. It appears then, that the top and the bottom layers must be permeable to the substances that are to be passed through the middle layer.

But such a teaching is contrary to the plain statement of present claim 1 that calls for: a coated microporous membrane comprising a microporous membrane with a coating of

breathable material which augments a liquid penetration resistance of the membrane for a liquid having a surface tension lower than the surface tension (73 dynes/centimeter) of liquid water, while the coating is maintaining transport of moisture vapor. Particular attention is directed to the words "augments a liquid penetration resistance of the membrane". Fragstein requires the reverse, namely, a reduction of the liquid penetration resistance so as to enable the middle layer to do its filtering.

A similar observation applies to present claim 13, which includes the language "impeding passage of a liquid having a surface tension lower than the surface tension (73 dynes/centimeter) of liquid water. Fragstein requires the reverse, namely, a reduction of the liquid penetration resistance so as to enable the middle layer to do its filtering.

The foregoing amendment is believed to provide a patentable distinction between the teachings of Fragstein and the presently claimed subject matter, so as to place the claims in condition for allowance. If any of the matters raised in the Action or any further matters have not been adequately resolved by this amendment, a telephone interview between Applicant's representative and the Examiner is requested in order to resolve any such outstanding matters.

It is believed that all the claims are now in condition for allowance in that they patently distinguish over the art. Accordingly, a favorable response indicating such condition is earnestly solicited.

Respectfully submitted,



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